

RESEARCH PAPER

## Testing an adaptation of the EPIC Physical Activity Questionnaire in Portuguese adults: A validation study that assesses the seasonal bias of self-report

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### Abstract

**Background:** No self-report method to measure different types and intensities of physical activity (PA) in adults has been tested in the Portuguese population. We assessed the validity, reproducibility and seasonal bias on past-year PA reporting.

**Subjects and methods:** A sample of 953 Portuguese adults was evaluated between 2001 and 2003. A 4 × 7-day PA diary was used as a reference method to evaluate the validity of the EPIC questionnaire adapted for the Portuguese population ( $n = 114$ ). Spearman's correlation coefficients were calculated and agreement was tested using Bland–Altman plots. Trigonometric linear models were used to assess the seasonal variation.

**Results:** Correlations between the questionnaire and the diaries were 0.56, 0.50, 0.88 and 0.78 for total, rest, occupational and leisure-time PA, respectively. The coefficients for reproducibility (2–3 months interval) ranged between 0.80 for leisure and 0.91 for occupational. Visualizing Bland–Altman plots, only rest PA revealed a tendency towards an increase in differences with increasing rest reported. Males interviewed in April and August reported the highest and lowest mean of leisure-time PA, respectively. For professional activities, the probability of amplitude being over one-half standard deviation was 33%.

**Conclusions:** The questionnaire is a valid and reproducible instrument for the brief assessment of usual energy expenditure in adults, detailing different types of PA. In males, seasonal bias on reporting leisure-time and professional PA was found.

**Keywords:** *Physical activity, measurement, validity, reproducibility, seasonal bias*

### Introduction

The measurement of physical activity (PA) is a challenge, especially in large epidemiological studies. Since PA is defined as any bodily movement produced by the contraction of skeletal

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